

## **WINP WG 6: Short-Baseline Accelerator-based Experiments**

### **Initial Summary Bullet Points**

February 3, 2015

- Accelerator neutrino beams at shallow depths provide excellent opportunities for a variety of near-term neutrino experiments.
- In the US, this is the Booster Neutrino Beam at Fermilab. These facilities are important to maintain and possibilities to further improve the BNB's performance for physics are under consideration.
- It is critical that existing anomalies in neutrino physics be definitively addressed. Accelerator DIF neutrino beams provide an opportunity to confront these anomalies through multiple channels ( $\nu_\mu \rightarrow \nu_e$  appearance,  $\nu_\mu$  and  $\nu_e$  disappearance, neutrinos and antineutrinos, neutral-currents).
- These facilities provide opportunities for making many other important physics measurements and for the development of new detector technologies in a neutrino beam.
- The need to understand this physics and to develop technologies for future programs motivates an aggressive time scale for many of these experiments.

In this session we will discuss several upcoming and proposed experiments to run in existing accelerator neutrino beams. Most take advantage of the near-surface Booster Neutrino Beam (BNB) at Fermilab and one is a proposed new near detector at J-PARC in Japan. Such beams offer a diverse near-term physics program including sensitive sterile neutrino searches, detailed studies of neutrino-nucleus interactions at GeV energies, the potential observation of coherent neutrino-nucleus scattering, and even dark sector particle searches through dedicated running in a beam dump mode. These facilities also provide excellent opportunities for the development and demonstration of new detector technologies in a neutrino beam. As the critical element in the US short-baseline program, we will also include a discussion of the BNB facility itself and potential upgrades now being explored.